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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/705,690	11/10/2003	James J. Mccoy JR.	21557-0002	. 5229
	7590 01/30/200 LLACE & NURICK L	EXAMINER		
100 PINE STREET			GANEY, STEVEN J	
P.O. BOX 1166 HARRISBURG, PA 17108-1166			ART UNIT	PAPER NUMBER
		·	3752	
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SHORTENED STATUTORY	Y PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE	
3 MON	NTHS	01/30/2007	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

· · · · · · · · · · · · · · · · · · ·	Application No.	Applicant(s)				
Office Action Summers	10/705,690	MCCOY ET AL.				
Office Action Summary	Examiner	Art Unit				
	Steven J. Ganey	3752				
The MAILING DATE of this communication ap Period for Reply	pears on the cover sheet with the c	correspondence address				
A SHORTENED STATUTORY PERIOD FOR REPL WHICHEVER IS LONGER, FROM THE MAILING Description of time may be available under the provisions of 37 CFR 1. after SIX (6) MONTHS from the mailing date of this communication.  If NO period for reply is specified above, the maximum statutory period Failure to reply within the set or extended period for reply will, by statut Any reply received by the Office later than three months after the mailing earned patent term adjustment. See 37 CFR 1.704(b).	DATE OF THIS COMMUNICATION 136(a). In no event, however, may a reply be tin will apply and will expire SIX (6) MONTHS from e. cause the application to become ABANDONE	N. nely filed the mailing date of this communication. D. (35 U.S.C. 8 133)				
Status						
1)⊠ Responsive to communication(s) filed on 10 N	November 2003					
	s action is non-final.	-				
<u></u>						
closed in accordance with the practice under						
	= x parto quayro, 1000 0.0. 11, 10	30 3.3. 210.				
Disposition of Claims		•				
4)⊠ Claim(s) <u>2-19</u> is/are pending in the application	1.					
4a) Of the above claim(s) is/are withdra	4a) Of the above claim(s) is/are withdrawn from consideration.					
5) Claim(s) <u>2-7</u> is/are allowed.						
6)⊠ Claim(s) <u>8-19</u> is/are rejected.						
7) Claim(s) is/are objected to.						
8) Claim(s) are subject to restriction and/o	or election requirement.					
Application Papers		•				
9) The specification is objected to by the Examine	er					
10) The drawing(s) filed on is/are: a) accepted or b) objected to by the Examiner.						
Applicant may not request that any objection to the	•					
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.						
Priority under 35 U.S.C. § 119						
<ul> <li>12) ☐ Acknowledgment is made of a claim for foreign</li> <li>a) ☐ All b) ☐ Some * c) ☐ None of:</li> <li>1. ☐ Certified copies of the priority document</li> </ul>		)-(d) or <u>(</u> f).				
2. Certified copies of the priority documen	its have been received in Applicati	ion No				
3. Copies of the certified copies of the price	ority documents have been receive	ed in this National Stage				
application from the International Burea	au (PCT Rule 17.2(a)).					
* See the attached detailed Office action for a list	t of the certified copies not receive	ed.				
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Attachment(s)	,					
1) Notice of References Cited (PTO-892)  4) Interview Summary (PTO-413)						
2) Notice of Draftsperson's Patent Drawing Review (PTO-948) Paper No(s)/Mail Date						
3) Information Disclosure Statement(s) (PTO/SB/08)  Paper No(s)/Mail Date 11/10/03.  5) Notice of Informal Patent Application 6) Other:						
Paper No(s)/Mail Date <u>11/10/03</u> .  S Patent and Trademark Office	o) [					
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#### **DETAILED ACTION**

## Claim Objections

1. Claims 2, and 7 are objected to because of the following informalities: In claim 2, line 12, the phrase "natural gas" should be changed to --gaseous fuel--, in order to maintain proper antecedent basis and remove double inclusion issues. Claim 8, line 9, the phrase "a combustion chamber" should be changed to --the combustion chamber-- in order to maintain proper antecedent basis, since "a combustion chamber" was introduced in the preamble. Appropriate correction is required.

## Claim Rejections - 35 USC § 112

- 2. The following is a quotation of the first paragraph of 35 U.S.C. 112:
  - The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.
- 3. Claims 8-19 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for "supersonic nozzle", does not reasonably provide enablement for "fuel injection assembly". The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims. The recitation of "fuel injection assembly" is broader in scope than what is disclosed in the specification, which is at most a "supersonic injector" or "supersonic nozzle".

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Claim Rejections - 35 USC § 103

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4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the

manner in which the invention was made.

5. Claims 8-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bulman.

Bulman discloses a fuel injection assembly for injecting gaseous fuel comprising an

antechamber 38, and a plurality of sonic nozzle passages having a converging section coupled to

a diverging section through a critical orifice, see col. 10, lines 58-66 and Figure 11A, except for

the specific recitation of a valve actuator. Note in col. 16, line 14, where Bulman discusses the

use of valving. It would have been obvious to one having ordinary skill in the art at the time the

invention was made to have a valve arrangement as claimed to control the fuel flow to the

antechamber 38, since such arrangements are well known in the fuel injection art and since

Bulman discloses the use of valving.

As to claim 9, see col. 9, line 49-52.

Allowable Subject Matter

6. Claims 2-7 are allowed.

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### Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Melenric '510, Melenric '554, Sohre, Wiegand, Beck, Nathenson and Haas et al show various types of converging-diverging nozzles.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven J. Ganey whose telephone number is 571-272-4899. The examiner can normally be reached on 7:00-5:00; M, Tu, W and Th.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kevin Shaver can be reached on 571-272-4720. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

sjg 1/22/07 STEVEN J. GANEY PRIMARY EXAMINER

1/22/07